JPRS 77699

30 March 1981

Worldwide Report

TELECOMMUNICATIONS POLICY, RESEARCH AND DEVELOPMENT

No. 155

FBIS FOREIGN BROADCAST INFORMATION SERVICE

NOTE

JPRS publications contain information primarily from foreign newspapers, periodicals and books, but also from news agency transmissions and broadcasts. Materials from foreign-language sources are translated; those from English-language sources are transcribed or reprinted, with the original phrasing and other characteristics retained.

Headlines, editorial reports, and material enclosed in brackets [] are supplied by JPRS. Processing indicators such as [Text] or [Excerpt] in the first line of each item, or following the last line of a brief, indicate how the original information was processed. Where no processing indicator is given, the information was summarized or extracted.

Unfamiliar names rendered phonetically or transliterated are enclosed in parentheses. Words or names preceded by a question mark and enclosed in parentheses were not clear in the original but have been supplied as appropriate in context. Other unattributed parenthetical notes within the body of an item originate with the source. Times within items are as given by source.

The contents of this publication in no way represent the policies, views or attitudes of the U.S. Government.

PROCUREMENT OF PUBLICATIONS

JPRS publications may be ordered from the National Technical Information Service, Springfield, Virginia 22161. In ordering, it is recommended that the JPRS number, title, date and author, if applicable, of publication be cited.

Current JPRS publications are announced in *Government Reports Announcements* issued semi-monthly by the National Technical Information Service, and are listed in the *Monthly Catalog of U.S. Government Publications* issued by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Indexes to this report (by keyword, author, personal names, title and series) are available from Bell & Howell, Old Mansfield Road, Wooster, Ohio 44691.

Correspondence pertaining to matters other than procurement may be addressed to Joint Publications Research Service, 1000 North Glebe Road, Arlington, Virginia 22201.

JPRS 77699

30 March 1981

WORLDWIDE REPORT

TELECOMMUNICATIONS POLICY, RESEARCH AND DEVELOPMENT

No. 155

CONTENTS

WORLDWIDE AFFAIRS

Nonaligned News Agency Pool Committee Meets in Delhi
(THE TIMES OF INDIA, 14 Feb 81; PATRIOT, 17 Feb 81)............. 1

Problems for Discussion, by N. L. Chawla
Report on Opening Session

Ericsson Sees Increased Sales of Phone Exchanges to USSR
(HELSINGIN SANOMAT, 14 Feb 81)................................... 6

Briefs
Finn Exchanges to USSR 7
Sweden, Saudi Arabia Contract 7
Swedish Phone Network for Iraq 7

ASIA

AUSTRALIA

Objections Voiced To Proposed Broadcast Control Changes
(THE WEST AUSTRALIAN, 24 Feb 81)................................. 8

Cost of Domestic Satellite Up $44 Million in One Year
(Ted Knez; THE AUSTRALIAN, 25 Feb 81)............................ 10

VHF Signals for Sydney Areas Expected To Improve
(THE SYDNEY MORNING HERALD, 7 Mar 81)............................ 11

INDIA

Center To Utilize Satellite Weather Data Reported
(THE HINDU, 12 Feb 81).. 12

[III - WW - 140]

Writer Reviews Satellite Development, Plans
(THE STATESMAN, 18 Feb 81).. 13

Computerization of Army Communications Planned
(PATRIOT, 15 Feb 81).. 15

Briefs
Frequency Allocation Liberalized 16

INDONESIA

Telecommunications Controlled by State Companies
(HARIAN UMUM, 23 Jan 81).. 17

JAPAN

Nation Joins Society for Worldwide Interbank Financial Telecommunication
(COMMERCIAL JOURNAL OF COMMERCE AND SHIPPING, 4 Feb 81).......... 18

NEW ZEALAND

Government Approves Development of FM Broadcasting
(THE EVENING POST, 23, 24 Feb 81).................................. 20

Public Inquiry Slated
'POST' Comment

Independent News Service 'NEWSTELL' Accredited
(THE EVENING POST, 24 Feb 81)...................................... 22

Anzcan International Telephone Cable Route Charted
(THE NEW ZEALAND HERALD, 14 Feb 81)................................ 23

Need Seen To Upgrade Satellite Tracking Station
(THE NEW ZEALAND HERALD, 16 Feb 81)................................ 24

VIETNAM

Briefs
Automatic Switchboard Installation Begins 25

LATIN AMERICA

CUBA

Transmission of Olympic Television Coverage Explained
(Lucy Gispert; JUVENTUD TECNICA, Oct 80).......................... 26

USSR

Fiber Optics Telephone Lines
(V. Ionov; SOTSIALISTICHESKAYA INDUSTRIYA, 20 Jan 81).......... 29

Briefs

Electric Motor Production 30
Automatic Telephone Exchange 30
Thin Television Screen 30
Ship Generator Testing 30
Miniature Hearing Aid 31

WEST EUROPE

INTERNATIONAL AFFAIRS

Briefs

Finland-Netherlands Phone Deal 32
Finnish Antennas to Scandinavia 32

FRANCE

Ground Forces Radio Communications
(Gerard Vaillant; DEFENSE NATIONALE, Jan 81)...................... 33

Ground Forces Automatic Communications Network
(Emmanuel Capeyre; DEFENSE NATIONALE, Jan 81)................... 39

NONALIGNED NEWS AGENCY POOL COMMITTEE MEETS IN DELHI

Problems for Discussion

Bombay THE TIMES OF INDIA in English 14 Feb 81 p 8

[Article by N. L. Chowla]

[Text] The one important task before the sixth meeting of the coordination committee of the news agencies pool in New Delhi (February 16 to 18) will be how to strengthen the arrangement, make it more credible and more acceptable to the press and other news media in the non-aligned world. The committee will have before it for assessment the volume of news being exchanged, working of the redistribution and training centres and the progress made to improve telecommunication, including satellite communication facilities.

The pool claims a fivefold increase in the volume of news exchanged--over 40,000 words a day through 13 agencies which act as redistribution centres. The pool includes more than 40 news agencies in the non-aligned world. Similarly there has been some advance in improving telecommunication facilities and the lowering of the transmission tariff even though an integrated telecommunication network for non-aligned countries is nowhere in sight. Training facilities have been expanded. In all five institutions, one each in Yugoslavia, Tunisia, Egypt, Cuba and India (the Institute of Mass Communication), provide courses for training in news agency journalism.

But the question is whether the progress has been satisfactory, whether newspapers and broadcasting systems have found the pool news acceptable, and if so, to what extent.

In the five years of its existence the pool can be said to have completed a circle. Although the idea of co-operation among non-aligned countries was mooted at the fourth summit in Algiers in 1973 and reaffirmed by foreign ministers in Lima in 1975, it was the first ever conference of information ministers of non-aligned countries in New Delhi in July 1976 that decided to set up the news agencies pool. A co-ordination committee of 14 countries with India as chairman was also set up at this conference. The New Delhi declaration was confirmed at the fifth summit in Colombo in the following month.

Global Information

The New Delhi conference had for the first time focussed attention on the inadequacy and imbalance of the global information flow and discussed measures to meet the challenge from the Western media. It took the view that the dissemination of information vested in the hands of a few agencies located in a few developed countries and that the "rest of the peoples of the world are forced to see each other and even themselves through the medium of these agencies". The Colombo summit endorsed this view and emphasised that "the emancipation and development of national information media is an integral part of the overall struggle for political, economic and social independence for a large majority of the peoples of the world who should not be denied the right to inform and to be informed objectively and correctly. Self-reliance in sources of information is as important as technological self-reliance since dependence in the field of information in turn retards the very achievement of political and economic growth".

Thus the pool was brought into existence as a result of a political decision. Non-aligned countries considered "decolonisation" of information and the establishment of a new international information order "as necessary as the new international economic order". There is no need to be apologetic about it. It is well known that 75 per cent of the news put out by international news agencies originate from Western sources and that news about third world countries constituting two-thirds of the world's population account for about ten per cent of the total.

The big four agencies, Reuters, U.P.I., AP and A.F.P., have also not deviated from their original concept of news "where action is" and have not accepted the proposition that there can be a relationship between information and national development. According to this concept, supply of information for development purposes requires separate channels for decision-makers and for mass mobilisation. These agencies subscribe to the theory that development news involves interpersonal influences and contacts and is designed for collective purpose and therefore does not constitute "action". The dependence of the "Big Four" on their domestic markets and their conceptual framework to meet the preferences of the people in the West is a valid justification for the pool. Besides, the development of alternative channels is desirable even from the point of view of expanding sources of news.

Limited Objective

The question however needs to be examined in relation to an agency set up for news collection and dissemination from within the non-aligned countries. Should there be a non-aligned agency to neutralise the impact of the existing monopoly systems? Non-aligned countries have their own differences and conflicts. But they have decided to stay together. The news pool has a role to play if the news exchange helps promote authentic information and assessment. In addition to widening the area of information the pool can deepen understanding of different attitudes to problems within and without the non-aligned world.

It has been said that the pool has a limited objective of correcting imbalances or inadequacies and to fill information gaps among the countries concerned. It has also been said that the pool is not a competitor to other world news agencies. All this has led to a certain amount of confusion.

Unless the pool moves towards becoming a news agency in its own right and competes with other agencies it is unlikely to acquire much strength. There is no reason why it should not aim at competing in speed as well as in credibility with the established agencies. The pool has to have its own infrastructure, trained manpower, equipment and efficient tele-communication linkages. It may take time for it to put out spot news in competition with the Western agencies. But unless the goal is set, it cannot be achieved. Only if the pool decides to function as a full-fledged agency can it acquire credibility and acceptance not only within the non-aligned countries but also outside.

To begin with the volume of material exchanged should be considerably stepped up. It should cover a variety of events and developments. The partner agencies of the pool should acquire the necessary professionalism which should ensure for their output a high professional standard and objectivity. Lack of professional competence and the widespread impression that the pool distributes government handouts are two serious handicaps which have to be overcome. So long as they are not, pool releases will suffer in comparison with the coverage by Western agencies. The pool must be more reliable than those whom we accuse of bias.

Report on Opening Session

New Delhi PATRIOT in English 17 Feb 81 p 1

[Text] The coordination committee of the non-aligned newsagency pool began its three-day sixth session in the Capital on Monday with member countries calling for greater professionalisation of the news service and hopes that the less developed would be assisted by UNESCO and others to help develop their news agencies.

The meeting, inaugurated by Union Information and Broadcasting Minister Vasant Sathe earlier in the morning, adopted the draft statute of the news agency pool. [as published] The draft has been remitted to the general conference for adoption at its meeting in 1982.

Briefing newsmen, a spokesman of the conference said the draft statute makes it clear that the news agency pool is a system for promoting cooperation among agencies of the member nations, and is not a supra-national news agency of its own.

Eighty-six delegates from 29 countries and seven international organisations are participating in the conference at Vigyan Bhavan. The international agencies present as observers include UNESCO, UN-DPI, Organisation of Asian News Agencies (OANA), Federation of Arab News Agencies (FANA), Association of National Information systems of Latin America (ASIN), OPEC News Agency and the International Telecommunications Union.

According to the spokesman, there were no controversies at the conference as right at the beginning it had been accepted that the recently concluded Non-aligned Foreign Ministers Conference had thrashed out all the points and had made a unanimous declaration. The spokesman said the Kampuchean ambassador has been invited to the inauguration together with other heads of diplomatic missions.

In Monday's discussions, in which nine countries--India, Sri Lanka, North Korea, Kenya, Angola, Tunisia, Malagasy and Vietnam--participated, the emphasis was on increasing the professionalisation of the news agency pool both in the context of news coverage and the technological aspects.

The delegates noted with satisfaction that the pool was transmitting 40,000 words a day and its items were gaining prominence in the media of the member countries. In this context, they were happy to notice that the Foreign Ministers' conference had made mention of the services of the pool.

Speakers, however, said that agencies like the UNESCO and the International Programme for Development Communication should come to the aid of agencies in the less developing countries.

Angola wanted greater training facilities for agency professionals. It said it wanted to send more trainees to institutions in India at the Institute of Mass Communication to improve and raise its agency staff.

Sri Lanka proposed an international style book for the pool members on the lines of the PTI style book to bring uniformity in the news stories.

Vietnam suggested amendments to the Pool Statute to put greater emphasis on professionalism. One of the suggestions was for greater exchange of information of the latest media technology available.

Mr Sathe in his inaugural speech offered India's capacities and experiences to all other Non-aligned countries for "the common endeavour for developing a balanced flow of information," agencies add.

He also reaffirmed that India would continue its endeavour to seek to change from an "unrepresentative heterogenous international information order."

Mr Sathe said that the new information order was an indispensable adjunct of the inter-related concepts of the new world economic order and collective self-reliance among developing countries.

He said India seeks a change from an unrepresentative monopolistic mass media to a definite, representative heterogeneous international information order reflecting unity in diversity among both the developed and developing countries.

Mr Sathe quoted in this context relevant portions from the declaration adopted by the Non-aligned Foreign Ministers' Conference on Friday.

The Ministers had taken a critical note of "tendentious media reportage" by the trans-national information agencies and organisations against developing countries and liberation movements.

India considered the new information order as an indispensable adjunct of the new economic order and collective self-reliance among developing countries.

Mr Sathe noted with satisfaction the "positive developments" in the evolution of a new world information order.

He said the pool had come a long way since the Lima conference of 1975 where the media pool was first mooted. Mr Sathe, however, said "we still have a long way to go to develop these exchange arrangements into a more professionally effective service."

Welcoming Mr Sathe, Mr N R Chandran, leader of the Indian delegation and general manager of Press Trust of India, reported significant development in regional and sub-regional cooperation among news agencies of developing countries.

Difficulties and disparities "unfortunately persist in global communication", Mr Chandran said. He stressed the need "constantly to reorient ourselves, refresh our priorities and work out new forms of cooperation for development of our national news agencies."

Coordination Committee chairman Pero Ivacic belonging to Yugoslav news agency Tanjug, spoke of the contribution made by India to the Non-aligned movement and the leading role played by Pt. Nehru in establishing it.

CSO: 5500

ERICSSON SEES INCREASED SALES OF PHONE EXCHANGES TO USSR

Helsinki HELSINGIN SANOMAT in Finnish 16 Feb 81 p 26

[Text] L. M. Ericsson sees the USSR market as an honorable way out of the labor cutback pressures caused by developments in phone exchange techniques. According to Yngve Olsen, the managing director of the company, the recent FMk 30 million sale to the USSR was the grand opening leading to increasing sales in future years.

Olsen says that conversion to digital and electronic exchanges cuts the labor required to a fourth for one connection. This means that the market would have to be tripled to keep employment constant.

Last year, L. M. Ericsson's trade was FMk 340 million, an increase from the previous year of FMk 30 million. The company's unfilled orders amounted to FMk 210 million.

Ericsson controls over half the market in Finland for telephone exchanges and at the very least the company sees it will maintain this share.

However, it will not be possible to secure employment at the factory without exports, and 40 percent of the year's output at Ericsson goes abroad. Last year, the export proportion of the total trade increased a little.

In past years, Ericsson has mainly been investing in the development of new systems. The most important of them has been the AXE system.

Last year, L. M. Ericsson made agreements on deliveries of digital exchanges to PTT [Posts and Telegraph Administration], Tampere Associated Telephone, Pallas-Hame Associated Telephone and Kemi Region Telephone Company.

9611
CSO: 5500

SWEDEN

FIRM EXCHANGES TO USSR--LM Ericsson has sold a fully digital telephone exchange to the Soviet Union. The exchange will be built in the city of Zaporozhe in the Ukraine, and the equipment will be delivered in a completely installed state by December 1981. The value of the sale is SKR 35 million. The AXE exchange system to be delivered to the Soviet Union has been exported to 25 countries. In Finland they have been sold [illegible] licenses to [illegible], Turku Telephone company and Tampere and Raasa. [Text] [Helsinki HELSINGIN SANOMAT 22 Jan 81 p 23] 8815

MORE IN SAUDI ARABIA CONTRACT--L.M. Ericsson's giant order from Saudi Arabia may be likely to increase by another billion kronor. According to AFFARSVARLDEN [The Business World], an increase of 200,000 lines is under discussion in addition to the million already contracted for by LM [Ericsson] together with Philips. The expansion will not be based on any international invitation for bids, but is being discussed directly between Saudi Arabia and LM/Philips. The project has increased more than once. LM had already installed 150,000 lines when, together with Philips, it took home the order for 470,000 lines in 1977. Since then there have been further orders for 300,000 lines in several installments, and now there is discussion of another 200,000 lines. The whole project is estimated today at about 13.5 billion kronor, of which half goes to LM/Philips with a certain predominance of LM. The amount of the present expansion is given in the report as between 1 billion and 2 billion kronor. [Text] [Stockholm DAGENS NYHETER in Swedish 24 Feb 81 p 31] 8815

SWEDISH PHONE NETWORK FOR IRAQ--The Swedish SRA [Swedish Radio Corporation], with factories in Kumla and Kista, has gotten its biggest order ever in an order for mobile telephones from Iraq worth 300 million kronor. It is Iraq's state administration that will take delivery of SRA's fully automatic mobile telephone system over the next 2 years. The telephones will also be used by the police and the military in Iraq. This is the same system as will soon begin to be provided in Sweden. By 1981 the whole Nordic area will be covered by the system, which makes it possible to make a connection with the ordinary telephone network automatically with a pushbutton telephone in a car. The new NMT system (Nordic Mobile Telephone System) will be completed in 1981. Earlier the SRA sold a similar but smaller system to Saudi Arabia. In Iraq, SRA will supply and install the nationwide system with everything from automatic mobile phones and electronic dialing equipment to the ordinary telephone network. The system includes type AXE telephone exchanges from L.M. Ericsson. Although Iraq is at war, SRA considers that it has gotten adequate economic guarantees for its undertaking, and has not felt the need of any export credit guarantee. SRA, which is owned 71 percent by LM Ericsson and 29 percent by British Marconi, has an annual turnover of about 700 million kronor. [Text] [Stockholm DAGENS NYHETER in Swedish 27 Jan 81 p 31] 8815

CSO: 5500

OBJECTIONS VOICED TO PROPOSED BROADCAST CONTROL CHANGES

Perth THE WEST AUSTRALIAN in English 24 Feb 81 p 30

[Text] Canberra: Any attempts to water down the controls governing share-dealing in Australian television stations would make them the target of foreign companies, the Labour spokesman on communications, Senator J. Button (Vic.), said yesterday.

He was commenting on a report of proposed changes to the Broadcasting and Television Act which the Communications Minister, Mr Sinclair, is expected to be placing before the Cabinet this week.

The changes would cut the power of the Broadcasting Tribunal to regulate commercial television and radio and give Mr Sinclair greater control over the tribunal's activities.

Senator Button said that the changes, if approved by the Cabinet, would be "a curious and sweeping departure from previous policies of the Fraser government" and a reversal of 25 years of Liberal policy.

They would enable Mr Sinclair to give a television station licence to his best friend and justify it by saying it was in the public interest.

They would also leave the way open for foreign companies to take a considerable interest in the Australian broadcasting system and lead to a further concentration of television station ownership and an upsurge in share-market raids on TV companies.

Changes

Mr Sinclair is understood to be recommending changes that would give him power to alter the definitions of public interest under the Broadcasting and Television Act. This would effectively stop the Broadcasting Tribunal from controlling share-market raids involving companies that own radio and television stations.

The Minister's office would not comment on a Melbourne report yesterday detailing the changes, except to say that there would be no statement out of the Cabinet, which will meet again today.

But Senator Button said that the reported changes were substantially the same as he had heard were pending.

There was also to be an additional provision that automatically would protect companies when they had unknowingly breached the Broadcasting and Television Act.

In the most recent case, the AMP Society came into breach when Pioneer Concrete Services, in which it had a substantial holding, took over Ampol, which controlled the Brisbane TV station Channel Seven.

Licence Term

Another proposed change would extend the term of a broadcasting licence from three to five years, but take away the tribunal's right to veto any changes of ownership that occurred within the term of a licence.

The broadcasting tribunal used its broad public interest power last September to block a bid by Mr Rupert Murdoch's News Ltd to buy control of the Melbourne TV station ATV10. (as published)

Mr Staley is also expected to want the tribunal to release a draft ruling on any matter it considers so that he and the parties involved in the case can file comments with the tribunal before a decision is made.

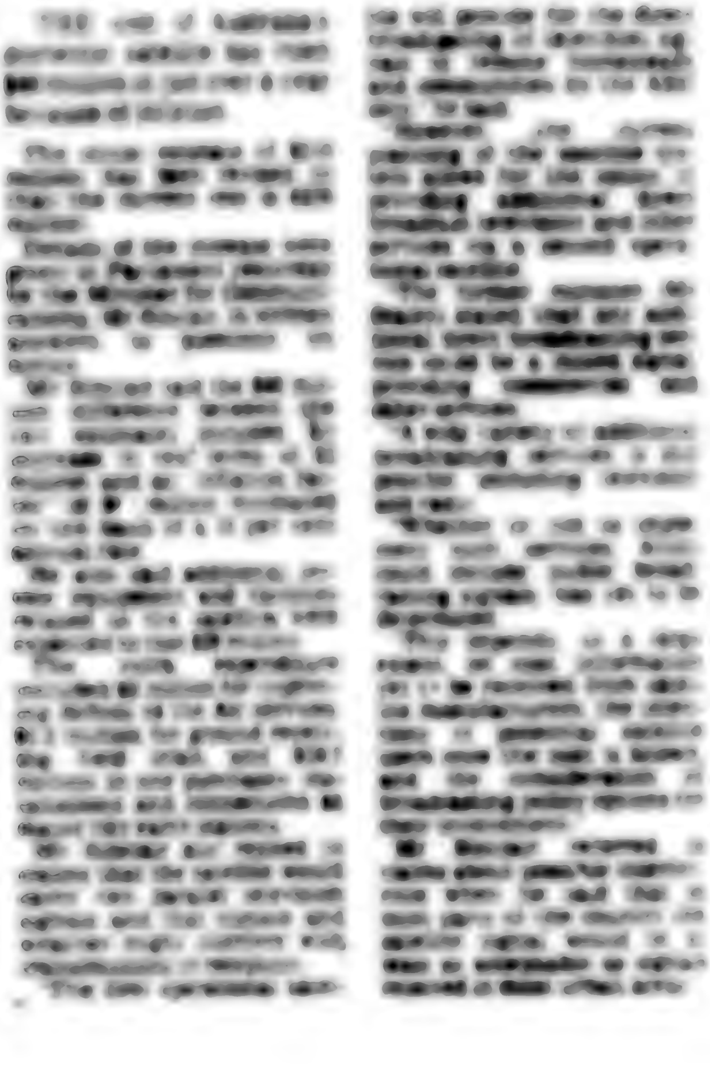
SMH, 7/80

COST OF DOMESTIC SATELLITE UP [illegible] MILLION IN ONE YEAR

Canberra THE AUSTRALIAN in English [illegible] Feb 81 p [illegible]

[Article by Ted [illegible]]

[Text]



CSO: 5500

UHF SIGNALS FOR SYDNEY AREAS EXPECTED TO IMPROVE

Sydney THE SYDNEY MORNING HERALD in English 1 Mar 91 p 1

[Text] CANBERRA. — Television reception [illegible]

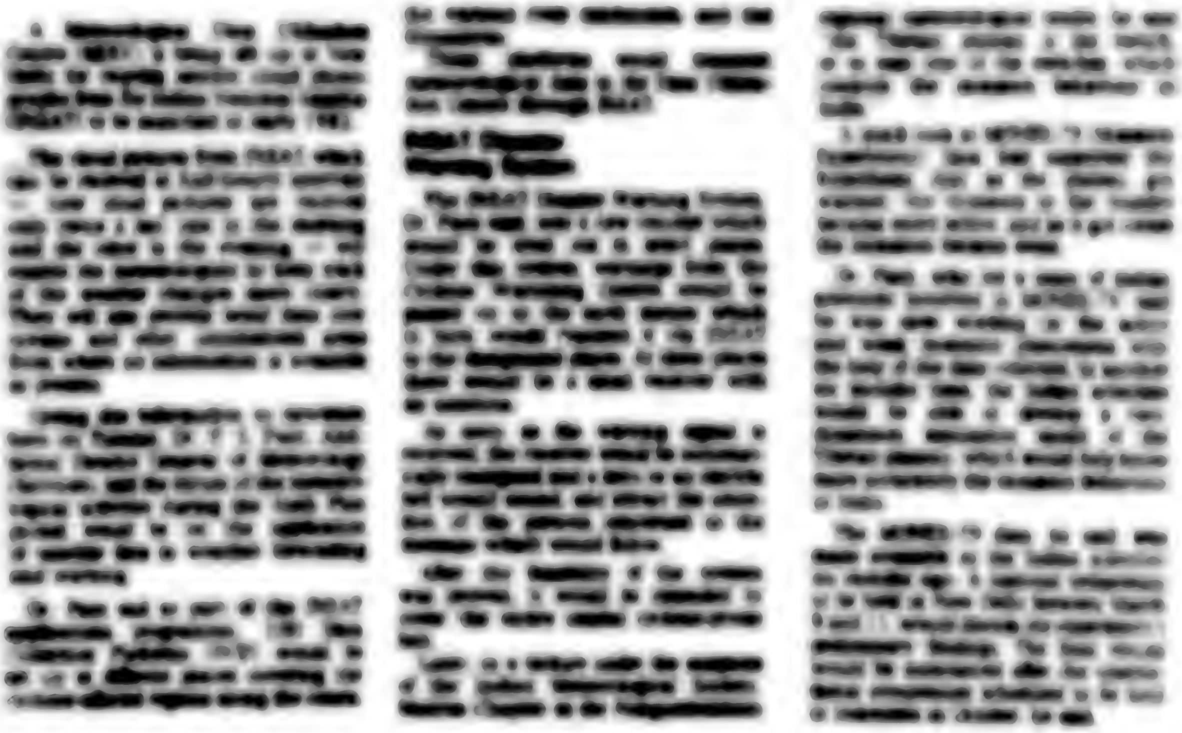
[illegible]

CSO: [illegible]

CENTER TO UTILIZE SATELLITE WEATHER DATA REPORTED

Madras THE HINDU in English 12 Feb 81 p 11

[Text]



CSO: 5500

WRITER REVIEWS SATELLITE DEVELOPMENT, PLANS

Calcutta THE STATESMAN in English 10 Feb 81 p 9

[Text] [illegible]

FUTURE USES

[illegible]

WORKING WELL

[illegible]

[illegible]

BIGGER CRAFT

[illegible]

COMPUTERIZATION OF ARMY COMMUNICATIONS PLANNED

New Delhi PATRIOT in English 13 Feb 85 p 13

[Text] [illegible]

CSO: 5500

BRIEFS

FREQUENCY ALLOCATION LIBERALIZED--New Delhi, February 11 (UNI): Licensing of private parties for use of radio frequencies is to be streamlined and liberalized. The communications ministry is consulting the concerned departments in this connection, according to official sources. The ministry has so far given about 9,000 licences to private radio users covering about 75,000 wireless stations. The growth of such "small" radio communication users has been rather inhibited till now by limited indigenous production of equipment, import restrictions and the protracted process of inter-agency consultations before granting licences. A number of Central and state sector manufacturing units are now embarking on production of different radio communication items. This is expected to lead to a large demand for licences. [Text] [Bombay THE TIMES OF INDIA in English 11 Feb 81 p 6]

CSO: 5500

TELECOMMUNICATIONS CONTROLLED BY STATE COMPANIES

Jakarta SINAR HARAPAN in Indonesian 13 Jan 81 p 3

[Excerpts] Director General of Posts and Telecommunications Sru Suryadi said that the Palapa A, which has been used well as a domestic satellite communication system, thanks to a stubborn struggle by the Indonesian delegation at the Sixth Assembly of Intelsat Parties in [illegible] at the end of October, will be used as a regional satellite communications system for ASEAN.

According to Sru Suryadi, Perumtel has made satisfactory progress. Since 8 August 1980, with the inauguration of the Indonesia-Singapore ASEAN undersea cable communications system, Telecommunications Indonesia has begun a new page in the history of international communications by opening up direct connections with Singapore, West Germany, Australia, Papua New Guinea, Japan, New Zealand, the United States and Taiwan.

Direct connections with the Netherlands, Britain and Hong Kong have not yet been completed due to technical problems, and there is as yet no agreement on rates. Connections with France will be explored, Suryadi noted.

Touching on the subject of radio frequencies, Suryadi noted that radio frequencies were a very important natural resource for development of a modern world, especially in the fields of telecommunications and navigation, as well as the management of various kinds of modern weapons systems.

On the one hand, the frequency spectrum is scarce and limited, and on the other hand, there is great demand, so there must be strict management, he explained.

He said that indiscriminate use of frequencies would result in pollution, and if not managed well, it could have serious consequences.

Suryadi said that the government of Indonesia had, since 30 December, purchased all the shares of PT Indosat, which has been held since the beginning by ACR, an affiliate of ITT.

Thus, said Suryadi, all Indonesian telecommunications, domestic and international, are managed by the State Enterprise Board.

Perumtel manages domestic communications, and PT Indosat manages international communications.

9197
CSO: [illegible]

NATION JOINS SOCIETY FOR WORLDWIDE INTERBANK FINANCIAL TELECOMMUNICATION

Oslo NORWEGIAN JOURNAL OF COMMERCE AND SHIPPING in English 4 Mar 81 p 22

[Text]

On August 3, 1981, 87 Japanese banks, representing almost the total of the Japanese banking system, will be linked to S.W.I.F.T., the Society For Worldwide Interbank Financial Telecommunications. They will then be able to transmit to, and receive from, some 800 banks throughout most of the Western world, messages covering a wide variety of financial transactions.

Created by some 240 United States and European banks in 1973, and operational since 1977, the Brussels based organization has developed rapidly. Its size today, and it remains the further expansion in the near future for example: In Western Europe S.W.I.F.T. members now claim almost 95 per cent of all banks involved in international business and commerce. The same appears in the United States.

Four Latin American countries (in addition to Japan) will join the system later this year. They are Chile, Ecuador, Uruguay and Mexico.

Earmarked for 1982 (or later) is the accession of banks in Portugal, Australia, New Zealand, South Africa, Peru, Colombia, Venezuela and, as the first East European nation, Czechoslovakia. There will then be banks from 36 countries in the system.

Availability around the clock and total security are the society's primary objectives. Security is said to mean safety, accuracy, privacy and reliability in a way which other types of transmission, say by telex, cannot achieve.

Standardization is another important aim. Transactions should be exchanged in forms which permit automatic identification and handling, and avoiding any 'language' or interpretation problems between members.

The steady and continuing expansion of S.W.I.F.T. traffic has meant that the average daily message volume was up to 220,000 per day. Without S.W.I.F.T., it would even take to grasp how many billions of dollars these transactions would correspond to day after day. For every single message is encrypted and can be deciphered only by the sending and receiving banks, but by none at S.W.I.F.T. centers.

The organization, which is owned by the banks and in 1980 had revenue equaling about 40 million dollars, has a fairly simple financial set-up.

There is a joining allowance fee of 50,000 dollars for every member bank regardless of size. On top of that, and irrespective of length and content, there is a charge of 14 Belgian francs (about 47 cents) for each message.

Thus it costs the same to transmit a message from Brussels to Luxembourg, as it does from Rome to Copenhagen, or from Hong Kong to New York. They claim this approach, the organization maintains, because a less uniform approach might have favoured the big banks at the expense of the smaller ones.

They add that, at this stage, they are more anxious to build up the network's efficiency and capabilities than to look for additional members. "We have our hands full," some one of them said, "and we have no plans currently to (be) searching new markets." This refers more particularly to Africa (other than South Africa) and the Middle East.

The system functions through three major switching centers, located in

[illegible]

[illegible]

GOVERNMENT APPROVES DEVELOPMENT OF FM BROADCASTING

Public Inquiry Slated

Wellington THE EVENING POST in English 23 Feb 81 p 4

[Text] The Government has decided to proceed with the development of FM broadcasting and the Broadcasting Tribunal will conduct a public inquiry to pave the way.

Announcing this today the Minister of Broadcasting, Mr Cooper said he expected to receive the inquiry report by August 1.

He said the Government's decision was made only after it had received firm assurances that developing FM broadcasting would not cause resources to be diverted from completing second channel television coverage throughout New Zealand.

Mr Cooper made the statement this morning shortly after the cabinet had decided to accept a recommendation on FM from its committee on communications.

The minister said the cabinet had agreed that broadcasting's development should be on the basis of co-ordinating AM and FM broadcasting so that the advantages of each could be exploited to the maximum.

In particular, it was recognised that FM broadcasting had the potential for a vastly improved radio coverage of rural areas than was provided by the present AM network.

Economic constraints which led to last year's embargo could now be met by limiting, if necessary, the number of radio warrants and their duration, both AM and FM, announced in each financial year.

Embargo

Mr Cooper said the present embargo, which was extended for two months following its expiry in February, would now continue until September 30.

"It will be extended after that only for the period necessary to consider the implementation of the Broadcasting Tribunal's recommendations," he said.

The Government's policy on FM, he added, closely followed a development strategy proposed by the tribunal chairman, Mr [illegible].

The public inquiry was necessary because FM development had to be carefully managed if the best use was to be made of available channels and if interference with other radio services and television reception was to be avoided.

He expected the public inquiry would give the industry a chance to realise that FM broadcasting was not an answer [illegible] applied to [illegible].

In particular there was the need to avoid proliferation of a service in [illegible] with limited coverage which could prejudice a more comprehensive coverage of New Zealand.

On Television Two, he said the Broadcasting Corporation would cover most of the remaining smaller population areas by the end of next year with remaining gaps to be filled as quickly as possible after that.

The Broadcasting Tribunal would shortly make public the terms of its hearings and how they would be conducted.

Interest

In a separate information sheet on FM broadcasting released with his statement, Mr Cooper said that for some time he had been conscious of a heightening interest in FM broadcasting and had sought public [illegible] of details on its introduction.

He put the following questions and answers.

What was FM broadcasting?

FM stood for frequency modulation, which meant that the sound transmitted whether speech or music was conveyed by a minute variation in the frequency of the signal. FM broadcasting took place in the very high frequency portion of the total range of radio frequencies as did television in New Zealand.

How did it differ from AM broadcasting?

AM stood for amplitude modulation — the sound was conveyed by minute variations in the intensity rather than the frequency of the signal. AM broadcasting occurred in the medium frequency portion of the radio frequency spectrum.

FM had two basic advantages over conventional AM.

It generated more stable and reliable reception over the coverage area and was comparable to that of television in this country.

It was also possible to transmit high quality stereophonic sound.

How should FM best be introduced?

The Government's firm view is a planned [illegible] of introduction was to enable establishment of the eight principal [illegible] broadcasting areas.

Will the establishment of stations be undertaken by the public or the private sector or both?

This was a question on which the Government would wait for recommendations from the Broadcasting Tribunal following its public inquiry.

Is a new radio receiver necessary?

If a person only had a set that could receive the present AM radio broadcasts, a set capable of receiving FM would be necessary — but many of the existing sets in use for AM broadcasting had an FM band.

A recent survey indicated there were some 400,000 sets in use in New Zealand which could receive FM. Furthermore, manufacturers were widely [illegible], and switched their entire production to sets with FM capability.

Could small stereo groups establish stations?

The Government could see advantages in the orderly development taking place from the eight principal transmitter sites.

However, there might be opportunities for some development by small interest groups either on a limited performance or full-time [illegible] basis.

'POST' Comment

Wellington THE EVENING POST in English 24 Mar 81 p 4

[Editorial: "Variety Must Be the Aim With FM Radio"]

[Text]

THE NEWS that the Government is to proceed, if only cautiously, with the introduction of FM broadcasting will be music to the ears of those who have long been urging its introduction.

But while the prospect of sharper listening has emerged, after a lot of pussyfooting around, it will still be some time before frequency modulation broadcasts are heard in this country.

Here is an instance where the Government is literally to embark on fine tuning — out of the necessity to [illegible] all of the [illegible]. There is a cost involved and it is being made quite clear that the decision to go ahead with FM development will not be at the expense of the completion of total TV2 coverage throughout New Zealand.

FM radio, therefore, is still very much in the planning stages. There is to be a public inquiry and it will be August 31 before the Minister of Broadcasting, Mr Cooper, receives the tribunal's report. Also, the present embargo is to continue until September 30.

Obviously, Broadcasting intends to keep a tight grip on FM and the all important public might well question why. Variety gives radio its spice and the introduction of FM is a perfect chance to break away from the rather stereotyped listening to which New Zealanders have become accustomed. In Wellington, for example, there are the pop stations, YC for the concert ear and YA left to satisfy all other tastes.

FM is said to bring out the best in music and speech because the sound transmitted is conveyed by a minute variation in the frequency of the signal. FM broadcasting, we are told, takes place in the very high frequency portion of the total range of radio frequencies (the spectrum), as does television in New Zealand.

On the other hand, AM (amplitude modulation) is sound conveyed by minute variations in the intensity, rather than the frequency, of the signal. AM broadcasting occurs in the medium frequency portion of the radio frequency spectrum.

The technicalities of FM broadcasting might well escape many, but it is now generally appreciated that frequency modulation, as a result of overseas developments, has something better to offer the listener.

It is worth noting that a recent survey indicated that there are some 400,000 sets in use in New Zealand which can receive FM. There are in fact few manufacturers who are not now switching their entire production to sets with FM frequency.

There can be no holding back the day when FM is a reality in New Zealand, as it is already in most countries. Its introduction here has to be orderly and it is not difficult to see that careful planning is necessary to ensure that available FM channels are allocated in such a way that they do not cause mutual interference among existing station assignments, [illegible] and television signals.

But need the Government appear to be so tardy in its approach? Mr Cooper would seem to take the view that FM should be for all New Zealand rather than have it begin in the larger cities and spread from there. Had such thinking been applied to television we would still be waiting for the advent of the box.

There is an opportunity for the Government and private enterprise to pool their talents and resources in the interests of the listening public.

Let the proposed inquiry be held and completed in the shortest possible time. And let the private sector know from the outset that the BCNZ does not intend to adopt a dog-in-the-manger attitude towards the control of FM broadcasting. Only in this way will the public be assured of getting the variety of listening they deserve.

CSO: 5500

INDEPENDENT NEWS SERVICE 'NEWSTELL' ACCREDITED

Wellington THE EVENING POST in English 26 Feb 81 p 4

[Text]

[illegible]

Broad

[illegible]

CSO: [illegible]

ANZCAN INTERNATIONAL TELEPHONE CABLE ROUTE CHARTED

Auckland THE NEW ZEALAND HERALD in English [illegible] Feb 81 p 9

[Text]

A route for the new Anzcan international telephone cable has been charted across the Pacific.

The cable will link Australia, New Zealand and Hawaii with North America replacing the existing Compac cable.

The survey was virtually completed when the survey ship HMNZS Monowai [illegible] at Vancouver, Canada [illegible].

The Monowai will leave Vancouver [illegible] and retrace the cable route to Auckland to check out a few gaps in the survey, according to the Navy hydrographer, Commander [illegible].

The survey had not [illegible] [illegible].

A few [illegible] had been found where the seabed had subsided, Commander [illegible] said.

The commander will [illegible] to join the Monowai for part of the return voyage. The ship is due in Auckland [illegible].

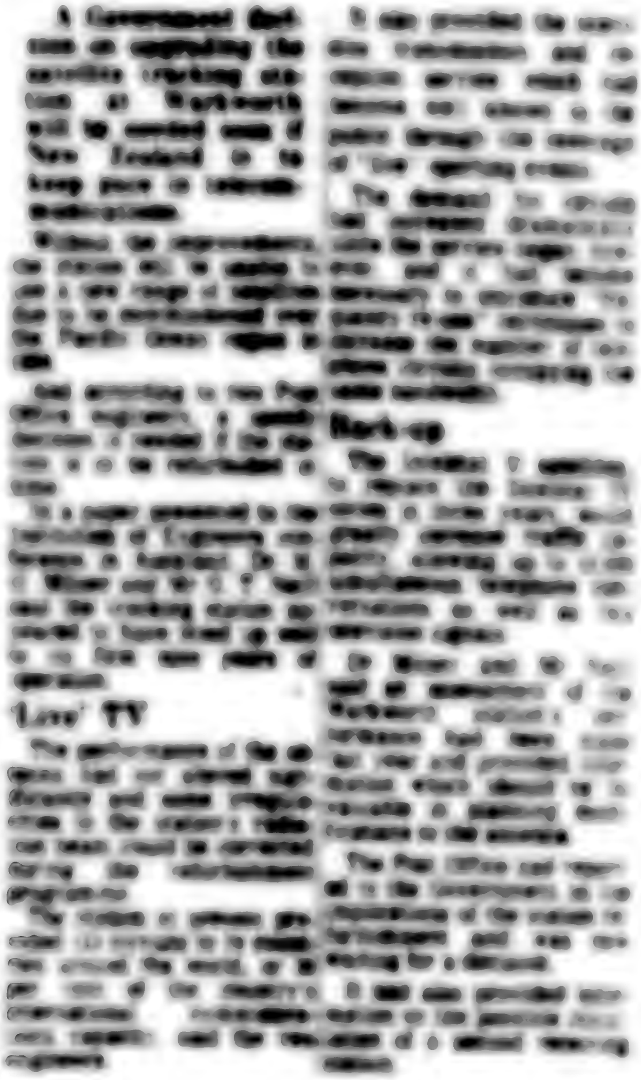
The total cost of surveying and laying the cable has been estimated at more than [illegible] and it will provide more than [illegible] new phone circuits.

CSO: [illegible]

NEED SEEN TO UPGRADE SATELLITE TRACKING STATION

Auckland THE NEW ZEALAND HERALD in English 16 Feb 83 p 16

[Text]



CSO: 4200

BRIEFS

AUTOMATIC SWITCHBOARD INSTALLATION BEGINS--The Binh Tri Thien Post and Telecommunications Sector recently began construction on an ATZ-650 automatic switchboard project. The project will consist of a 400 drop automatic switchboard produced by the German Democratic Republic. The working units are striving to complete the project by the end of June 1981. [Text] [Ho Chi Minh City SAIGON GIAI PHONG in Vietnamese 31 Dec 80 p 6]

CSO: 4209

TRANSMISSION OF OLYMPIC TELEVISION COVERAGE EXPLAINED

Havana JUVENTUD TECNICA in Spanish Oct 80 pp 52-53

[Article by Luis Ciepert: "Signals from Olympic Moscow"]

[Text] For the simultaneous production of 100 international television programs and a similar number of radio programs in 1980, the USSR built the Olympic Tele-Radio Center, the largest ever established for covering world events.

Because of the large number of reporters and writers who worked there, technical conditions, offices, positions in the sports areas and all types of communications lines were created in the Soviet capital.

The radiobroadcasting organizations also had the chance to produce national programs for their respective countries, as well as regional programs for the "pools" such as those of INTERVISION and EUROVISION beamed at the community of socialist countries, including Cuba.

Allocation of the Channels

Radio and television signals produced in the various sports areas (Moscow, Tallin, Leningrad, Kiev and Minsk) were sent to the Olympic Tele-Radio Center located in Moscow and from there distributed by means of land and satellite links.

How Did the Signals Reach Cuba?

Our country received its programs via satellite because of the considerable distance which separated us from the Olympic site. To insure the allocation of the international channels, delegations from the Ministry of Communications attended meetings where the plan for the channels of the member countries of the INTERSPUTNIK system were prepared and approved.

STATIONAR

For this great event, and meant for the use of the member countries of the INTERSPUTNIK System, among them Cuba, the USSR launched a new type of geostationary communications satellite named STATIONAR.

The satellite is in orbit around the earth on an equatorial plane at an approximate distance of 1,000 kilometers, turning in the same direction as the earth.

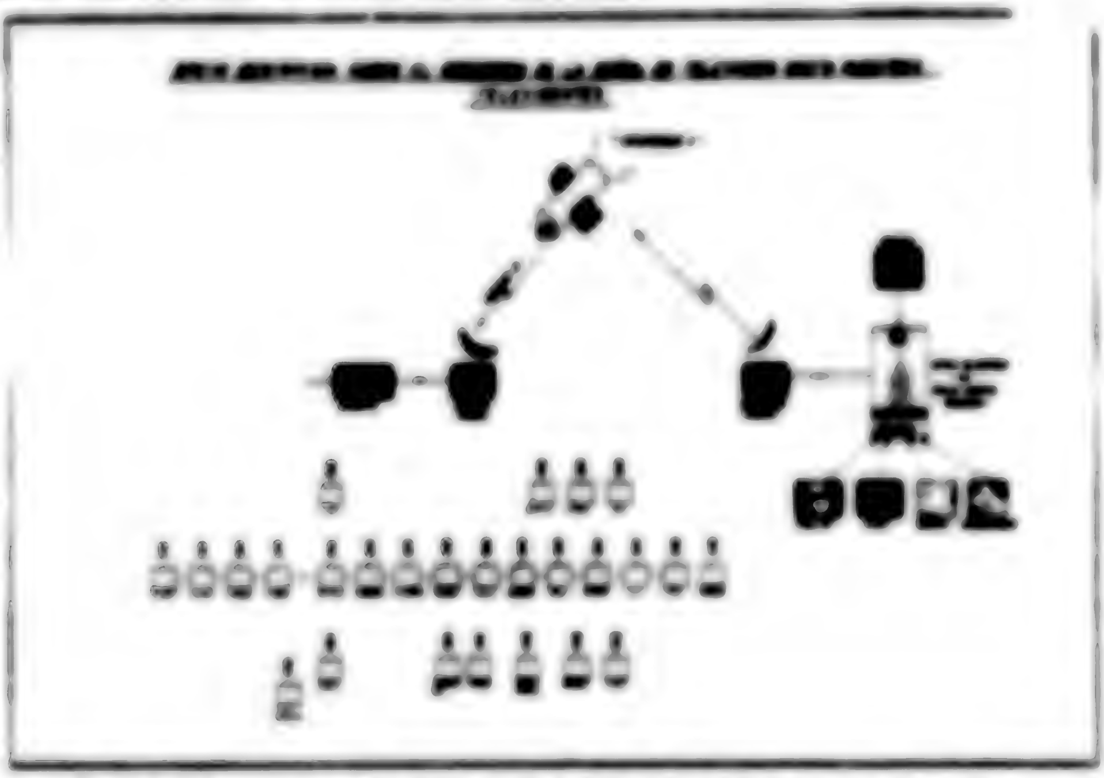
Under these conditions the angular velocity of the earth and the satellite is the same, for which reason the satellite remains fixed with respect to any reference point on the globe.

STATIONAR began operations in substitution of satellites of the Molnya type of elliptical orbit, of which four are required to maintain communications during the 24 hours of the day, with the inconvenience of having to turn them off when changes of satellites are made during the course of the day.

The places where STATIONAR 4 and 5 are located are certain points over the Atlantic and Indian Oceans.

Travel by the Signals to the Receivers

For the reception of radio and television signals, ENTELCUBA (Cuban Telecommunications Enterprise) is responsible for the use of a terminal in the Caribe Earth Station located in the town of Jaruco, where signals were received from the Olympic Games. Once there, these signals were sent to the Cuban Radio and Television Institute, which in turn transmitted them to the viewers and listeners, the final objective of all this technical effort which cosmic science placed at the service of world communications.



Brief description of the path taken by television signals to our viewers

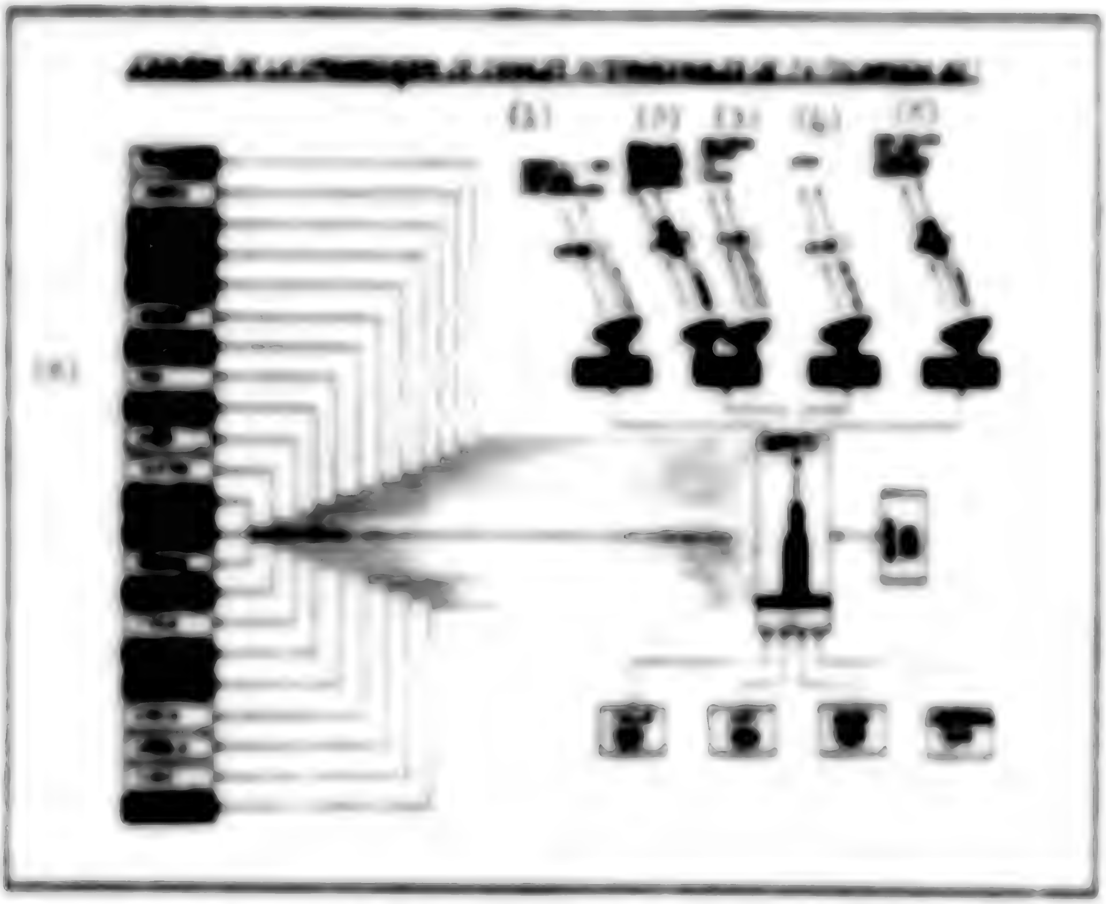


Diagram of "Olympiad 80" international TV channel allocation

Key:

1. Latin America (USA), Arab and African countries (Canada)
2. Somalia, Algeria, Angola, Vietnam, India, Philippines, Malaysia, Australia
3. England, France, United States, Canada
4. Japan
5. Cuba, GDR, Bulgaria, Hungary, Czechoslovakia, INTERVISION, EUROVISION
6. Norway, Sweden, Belgium, FRG, Switzerland, Austria, Romania, Italy, Greece, Algeria, Tunis.

PMCH
CSO: [illegible]

FIBER OPTICS TELEPHONE LINES

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 27 Jan 81 p 4

[Article by V. [illegible]: "Light Carries Information"]

[Text] When talking today by telephone with any corner of the country, not every Gorkiy resident knows that the first thousand meters of his voice is carried through the cable by light rather than electricity. An installation which converts audio information to light pulses has been installed at one of the city telephone exchanges and a laser beam transmits the light pulses to the long-distance telephone center. A special cable has been laid for this where especially pure glass fibers are used instead of ordinary copper strands.

However, before proposing glass as an ideal conductor for communications lines, it was necessary to work on increasing its optical properties. After all, light is attenuated tens of billions of times per kilometer in the most transparent quartz glass. And it is necessary that these losses be at least a billion times less. Scientists at the Institute of Chemistry of the USSR Academy of Sciences under the supervision of Academician G. Devyatykh were engaged in development of methods of producing especially pure light guides. Together with his colleagues from the laboratory of Academician A. Prokhorov of the Physics Institute imeni P. N. Lebedev, they managed to solve the problem of deep purification of the glass and to create a light guide design with the required optical properties. The light losses per kilometer of segment are only 1.25 times in the conductor which they produced. The path to practical use of glass fibers in communications was opened. Experimental production of fiber light guides began in Gorkiy at the base of the Institute of Chemistry. And the first communications lines appeared.

"The capabilities of fiber optics communications where the signal carrier is a laser beam are truly enormous," Academician G. Devyatykh told a TASS correspondent. "It brings closer to reality the videotelephone, on the screen of which both television programs and book manuscripts stored in different libraries of the country and training films can be called up. Moreover, unlike copper conductors, hundreds of different programs can be transmitted simultaneously over a single light guide. Our institute has already manufactured more than 200 kilometers of light guides for various needs, but the demand for them will increase vigorously and industrial production of this glass fiber must be introduced now. And this makes many interesting ideas of communications specialists a very near reality.

6521
CSO: 5500

BRIEFS

ELECTRIC MOTOR PRODUCTION--The collective of the Vladimir Electric Motor Plant, reports TASS correspondent, has organized production of asynchronous electric motors of improved design. The expenditures of metal to manufacture the new designs have been reduced considerably. The output of the motor was increased. The use of these units provides broad opportunities for mechanization and automation of worker processes. A total of 100,000 units will be manufactured this year. Redesign permitted the collective of the enterprise to increase the output of electric motors. [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 29 Jan 81 p 2] 8521

AUTOMATIC TELEPHONE EXCHANGE--An automatic telephone exchange has been turned over for operation in the new, Leninskiy Rayon of Kemerovo. It eased the load of channels of existing ATS [automatic telephone exchange] and improved the provision of telephone communications to the population of the oblast center. The communications workers of the Kuzbass fulfilled the main items of the five-year plan ahead of schedule with start-up of this exchange. [Text] [Moscow TRUD in Russian 11 Jan 81 p 2] 8521

THIN TELEVISION SCREEN--A screen three millimeters thick will replace today's television sets in the near future. A glass plate with special films attached tightly to it, which were developed at the Institute of Semiconductors of the Ukrainian SSR Academy of Sciences, may serve as the picture tube in this apparatus. These thin films also fulfill the role of devices which receive and convert electric signals to a picture. The innovation will find broad application in industry, especially in ASU [automated control systems], where various types of television devices, display boards, displays and oscillographs are required. The semiconductor television set will also come into our homes. This television set can be hung on the wall like a picture. [Text] [Moscow TRUD in Russian 6 Jan 81 p 4] 8521

SHIP GENERATOR TESTING--Scientists of the Leningrad Electrical Engineering Institute have proposed that ship electric generators be tested in a new manner. Instead of the expensive loading devices usually employed during berthing trials, they have proposed that the plant electrical system be used. Sending the energy of the ship generators into the system, the running mode under any navigation conditions can be simulated. The electric power generated in this case is not expended in heating elements as before, but passes through the shore transformers to the shops of enterprises. "The new method of testing made it possible to significantly reduce the deadlines and to increase the reliability of testing," says one of the inventors of the method Associate Professor Yu. Tensinen. "Almost 100,000 rubles were saved alone when the floating crane 'Titan' was turned over for operation and the annual saving from using new personnel at the country's shipyards has already exceeded two million rubles. More than seven million kilowatt-hours of electric power, previously expended unproductively, had to be fed to the energy systems annually. Shipbuilding is not the only sector of the national economy where the new method of testing can bring a substantial saving. In the opinion of the inventors, it is very effective, for example, in machine building when checking mobile power plants. [Text] [Tallinn SOVETSKAYA ESTONIYA in Russian 1 Oct 87 p 4] 6521

MINIATURE HEARING AID--The engineers of the Tallinn Plant imeni Pegel'man have developed a microcircuit on the basis of which the world's smallest hearing aid [illegible] was made. And this is not only the smallest, but the most sensitive artificial ear. It operates from a storage battery the size of a very small button in which the nominal voltage is a little more than 1 volt. A low-noise amplifier is quite sufficient for this. Its output stage is excited only when sound reaches optimum intensity. The device is on standby the remaining time, essentially consuming no energy. Therefore, a single charge of the battery is sufficient for 40 hours of continuous operation. [Text] [Riga NAUKA I TEKHNIKA in Russian No 8, Aug 87 p 7] 6521

COPYRIGHT: Izdatel'stvo TsK KP Latvii, "Nauka i tekhnika", 1987

CSO: 1848

BRIEFS

FINLAND-NETHERLANDS PHONE DEAL--Sahkoliikkeiden Oy [SLO] company has made an agreement with a Dutch company for a sale of over FMK 40 million worth of express telephones. According to the agreement, SLO will export approximately 30,000 express telephones to the Netherlands in the next few years. The Dutch company will market the equipment further to France and the United States. The express phones developed by SLO have been in the Finnish market for some time already. One of the special features is a separate viewing screen where message can be left. [Text] [Helsinki HELSINGIN SANOMAT in Finnish 6 Feb 81 p 33] 9571

FINNISH ANTENNAS TO SCANDINAVIA--Telesto Oy Company of Turku is currently installing in Oslo, Stockholm and Copenhagen paraboloid mirror antennas which are 3 meters in diameter and intended for the reception of French TV-programs. The installations will be completed during the first half of February and the tests on reception of the programs will also begin at that time. [Text] [Helsinki HELSINGIN SANOMAT in Finnish 6 Feb 81 p 33] 9571

CSO: 3109

GROUND FORCES RADIO COMMUNICATIONS

Paris DEFENSE NATIONALE in French Jan 81 pp 134-139

[Article by Gerard Vaillant]

[Text] In our November report, we mentioned some features of the competition between the two superpowers in the area which the Americans refer to as C^3I: Command, Control, Communications and Intelligence, and in this regard we regret the scarcity of French reports on a closely related subject, electronic warfare. A recent visit to the Ground Forces Electronics School, ESSAT, in Rennes has enabled us to provide our readers with additional information not only about the struggle to control electromagnetic space, that fourth dimension of combat, but also and particularly about our army's communications and the changes which it is undergoing to meet the challenges of expanding electronics and data processing in the armed forces.

Army Communications for Military Needs and Challenges of Modern Electronics

Communications is a young and dynamic branch of the military. Established in 1942--it was previously a subdivision of weapons engineering--it has developed rapidly and today includes 25,000 persons: 1,400 officers, 8,000 noncommissioned officers, 15,000 enlisted personnel and 1,600 civilian personnel. The large percentage of women in its ranks should be noted: 50 female officers and 1,600 noncommissioned officers.

It provides units either for operating with troops (13,500 persons) or for serving infrastructure and data processing centers (11,500 persons).

Troop units include 11 regiments: 1 high-command communications regiment, 1 ground forces regiment, 3 1st Army Corps regiments, 3 2nd Army Corps regiments; 2 3rd Army Corps regiments; 1 electronic warfare regiment; 16 companies, 1 per division, for infrastructure and data processing, plus 1 for electronic warfare (ESSAT experimental company); 3 operational regiments and 5 operational groups (or 1 regiment or 1 group per military region, as in Germany and Tahiti)--each of these units has detachments in military divisions, large garrisons, camps, schools, etc.; 2 national automatic data processing centers, including one specially assigned to logistic data; 6 regional centers.

There are three communications schools: in Montargis, for officers, in Agen, for noncommissioned officers, and the Ground Forces Electronics School in Rennes.

As old as the ages, in recent decades the mission of communicating and communications has undergone a fantastic development which has kept pace with technological development. No branch of the military has had to adapt to the latter so quickly. Between the infancy of radiotelephony and the Ground Forces Integrated Communications Network, RITA, which will equip our forces tomorrow, there is the same distance as between Greek fire and the H-bomb.

Modern warfare is becoming more and more avid for information of all kinds and in the case of communications it is no longer just a question of establishing links between commanders, but also between staffs, between multiple work units consuming information in the most varied forms, whether verbal or written, orders, reports, documents, logistic data, etc., and depending on various emergencies. It is also the job of communications to protect the circulation of information against enemy attack and, conversely, to impede or paralyze enemy electronic operations. Finally, it is a question of keeping the command informed and helping it to make decisions very quickly through computerization and automatic processing of a mass of data. Rapidity of command reaction in nuclear combat and reliability of its information and orders are the prerequisite for its weapons' effectiveness.

To handle these missions, communications has had to "wed its century" electronically: digital data, microprocessors, optical fibers tomorrow, so many new technologies whose mastery implies intellectual change and a tremendous effort to adapt. In this respect, communications is a young, vigorous and even invigorating branch.

Communications personnel are constantly on the alert because they work "on a real scale" and there are no false pretenses for them: "It works" or "It doesn't work." Regardless of the volume of messages, communications is in operation on weekends as well as during the week, in peacetime as well as in wartime, and its drills are always real drills.

The branch of communications is even more invigorating because it is obliged to adapt to command's operations. It also recently had to adapt to the reorganization of ground forces and we know what confusion that disruption of structures produced, particularly with the elimination of the brigade unit and the unification of territorial and operational commands.

RITA

The army will soon put RITA, Automatic Integrated Communications Network,[*] into operation, beginning in 1982, whereas infrastructure is already using RITTER, Ground Forces Integrated Communications Network using microwave links.[*] Both are grid networks. The former is a mobile network hooked up according to the operation, whereas the latter is a stationary network. RITA is a grid network of automatic electronic switches made up of nodal points connected together by radio links. Stationary CP [command posts] are also connected to it by radio links and mobile CP by radio integration. The length of the grids formed by these points is approximately 40 kilometers.

---

[*] RITA and RITTER are the subject of Emmanuel Lepeyre's report in the present issue.

The network thus formed uses telephony (wire or radio), telegraphy (wire or radio), images or data. The network is integrated, i.e., at the junctions data is synchronized, converted into signals and transmitted by the same type of modulation: pulse-code modulation (PCM). Data is transmitted in digital form.* Routing, i.e., the correspondent's determination of a path for transmitting the data, is automatic, with the user merely displaying the correspondent's number on his equipment without worrying about his position. In case of grid destruction, the communication is automatically rerouted over another path of the grid. Each junction is automatically and electronically coded.

Network Command Centers (CECORE) provide for centralized management and control of a RITA system. Any RITA system can be hooked up without difficulty or delay, thanks to appropriate interfaces, to a neighboring corps' RITA system, to infrastructure networks (PTT [postal, telephone and telegraph system] and RITTER) and to allied NATO networks.

When they are in possession of these systems, the French and Belgian armies will be ahead of all others, including the United States, whose comparable system, JTIDS (see our November report) will not go into operation until 1986.

Communications will have to take up this digital data gamble, which has been accepted with RITA. Their staffs, officers and noncommissioned officers are being prepared for this by ESEAT, which is currently in the process of training third-generation RITA equipment testing personnel (first-generation equipment underwent intensive testing for 3 years by a unit of 200 persons and 80 vehicles carrying out dozens of operations).

Ground Forces Electronics School

An offshoot of the former Pontoise Technical Communications School and commanded by a general officer, ESEAT is located on the outskirts of Rennes in a verdant setting and architectural plan which make it a magnificent achievement.

It has three principal missions: to instruct army officers in general electronics, supplemented by practical studies; the practical training of communications personnel and personnel of other branches or services concerned with technical specialties of the "electronics, telecommunications and data processing" branch of the military; the instruction of inter-services officers in general and specific data processing techniques.**

The school has significant resources: MITRA 125 and MITRA 15 computers, B 776 heavy terminal connected to a B 6800 computer of the Rennes CTI [Center for Data Processing Technology] (this terminal will soon be replaced by a MINI 6-C13-HR), SFENA CD.500 computer with 9 consoles, 2 CARTEL [automatic telegraph relay centers] and CARSEL [expansion unknown] automatic switches, etc. It has 19 practical work rooms with 8 positions each.

---

*Using binary signals (0 or 1) instead of analog signals where the intensity follows a sine wave, reproducing that of the sounds or images by analogy.

**General data processing refers to administrative processing, whereas specific data processing concerns weapons systems.

The school accepts 1,000 trainees each year in about 60 courses. The main ones are: --The secondary technical course for officers, making it possible to obtain the diploma of engineer and/or the technical diploma; there are two choices: 1. Electronics and specific data processing; 2. Methods, operating techniques and administrative data processing. Over a 2-year period, about 20 French officers and a few foreign officers are graduated. --The elementary course, making it possible to obtain the technical certificate in 12 months; choices are: carriers (radio and microwave links), terminal equipment (telephony, telegraphy), electronic warfare, data conversion and transmission, cryptographic studies. --The CT 1 and CT 2 preparatory courses for noncommissioned officers specializing in data processing or telecommunications; 800 noncommissioned officers, men and women, took this course in 1979.

In constant contact with the Graduate School of Electricity, the National Center for Telecommunications Studies (CNET) of Lannion, the Electronics Center for Munitions (CELAR), the school has a high-level teaching staff: university professors, technical staff college officers, civilian personnel on a level with that of the Ministry of Defense.

The school is playing a pilot role in the area of electronic warfare through its experimental company.*

Electronic Warfare in the Army

Everywhere that there is transmission or reception of electromagnetic waves, whether it is a question of data transmission, detection and destruction of land or air targets, weapons or vehicle guidance, electronic warfare is involved, warfare whose gains or losses are alone capable of determining the outcome of a conflict. There are many historical examples: such as the Battle of London, in which the English managed to divert Luftwaffe raids by distorting the radioguidance of German aircraft. We might also think of what could happen if allied radar were suddenly blinded ...

As we said in our previous report in December, the Soviets attach the greatest importance to this "radioelectric combat," to such a degree that they use it not only to coordinate their transmitters, but also their artillerymen, aviators and paratroopers through raids on targets which to some degree represent the enemy's antennas, eyes and nerve centers.

In our case as in the case of our allies, the navy and air force are more particularly aware of the aspects of this warfare, which is aimed at weapon systems, missiles and radar. Ground forces' transmitters are more concerned with defending their communications networks and with the advantage to be derived from intercepting transmissions and interfering with enemy networks.

Electronic warfare thus takes on two aspects: an "attack" aspect, which consists of initiating electromagnetic action against enemy transmitting or receiving equipment, and a "defensive" aspect, which consists of protecting its own transmitting or receiving equipment against such action.

---

*Which is the same type as the two electronic warfare companies of each army corps.

Whereas defensive actions are the concern of everyone, from designers of equipment resistant to jamming or "scrambling" of transmissions to the command establishing the regulations for their use and those maintaining discipline, offensive actions are particularly the concern of units specializing in electronic warfare.

Two types of electronic warfare operations can be distinguished from the offensive standpoint: electronic search measures (ESM) and electronic countermeasures (ECM).

The former consist of making the best possible use of enemy transmissions by intercepting them, by analyzing them (content of message if possible[9] but also by analyzing the "container," i.e., the form, frequency, characteristics and all components needed for possible action on the transmitter) and by locating them. Without the content even being established, the analysis and location of transmitters will make it possible to recognize weapon systems, command posts, to identify units and to reconstruct the order of electronic warfare, an image of the actual order of combat, to gather intelligence about the enemy's general activity, his attitude and intentions, provided of course that this information can be correlated with data provided by other intelligence sources.

Electronic countermeasures (ECM) consist of obstructing the enemy's command networks and weapon systems by an electromagnetic transmission. Steps are thus taken to scramble and intrude on them (these networks are penetrated to give them false information or instructions), and to deceive them (the enemy is deceived by providing him, through transmissions, with the false image of a target or large unit when in reality no such thing exists). These operations are difficult to carry out and in any case imply a prior ESM action providing a good knowledge of the characteristics of the receiving equipment (or of the homing devices of missiles ...) which we want to obstruct or deceive.

Through electronic defense measures (EPM), an effort is made to establish in some way a screen obstructing enemy ESM and ECM. This is achieved by strict observance, already mentioned, of the rules and procedures for using radar and communications, by generalization of cryptography and cryptophony (transmissions are chopped and cut into sound components which are incomprehensible to the receiver who does not have the key to this fragmentation and cannot reconstruct it), by using very quick, "nimble" transmitters, i.e., which constantly change frequency in a very brief period.

The means used to attack enemy equipment are those of two types of units; units specializing in attacking communications systems and those specializing in attacking weapon systems (radar). The two types of units exist in each electronic warfare company.

---

[9] In the case of both the allies and the Warsaw Pact, coding has developed to a tremendous degree with the introduction of coding and decoding devices incorporated into radiotelephone transmitters and teleprinters. The "old style" code has survived. It has been converted into an electronic type. It is now present everywhere in terminals and requires many more working hours and powerful processing machinery of those desiring to break it. Thus the threat in this area has been set back and now concerns the keyholders more than the keys themselves, thus the very cautious choice concerning their selection and the strictness of security regulations required for such personnel.

These attacking communications systems can be adapted either to the HF (high frequency) or VHF (very high frequency) range. They all include: interception and listening stations (radio and microwave links); locating stations (mobile radiogoniometry chain with control station); scrambling stations; analytical teams.

These units have their own means of linkage. In the field, their various components are deployed in appropriate locations so that their action will be as effective and as accurate as possible (particularly for goniometric cross-checking). Two electronic warfare companies make it possible to cover the front of an army corps. With respect to the depth of action, it can be said that from the standpoint of scale, it is half of that of the front covered.

In closing, let us stress the fact that electronic warfare must be a constant concern of all combatants, at least with regard to defense. It is also the concern of command, for which it is a very valuable aid. It is not suddenly deployed; it cannot stand surprise. It is already engaged today.

If communications personnel were to inscribe only a single nom de guerre on their flag, that of controlling electromagnetic space would be enough to earn them the respect and gratitude of all their comrades in arms.

11,915
CSO: 3519

GROUND FORCES AUTOMATIC COMMUNICATIONS NETWORK

Paris DEFENSE NATIONALE in French Jan 81 pp 160-162

[Article by Emmanuel Gapeyre]

[Text] Communications

An article in the August-September 1980 issue was devoted to communications, more specifically to the general organization and development of this branch of the military on the battlefield. Further details concerning that report are now available, i.e., information on troop communications and infrastructure communications.

Troop Communications: RITA

The Automatic Integrated Communications Network (RITA) is an entirely new communications system. It was designed to meet the telecommunications needs of a corps of field forces in the areas of: telephony (wire or radio), telegraphy (wire or radio), transmission of images or data.

It satisfies a dual requirement: permanence and absolute security of links; ease for the various CP [command posts] in connecting to the network, regardless of their positions in the corps area.

It is a highly versatile grid network which can be set up and dismantled according to the pace of the inter-services operation. It is composed of nodal points connected by microwave links. Stationary CP are connected to these nodal points by microwave links and mobile CP by radio integration.

The nodal point is the system's basic component which makes possible the grid network and connections. It is autonomous. It provides for its movements, use and security itself. It is ready to operate in 2 hours. It is dismantled in 1 hour. It has the following technical equipment: 8 microwave links, 1 automatic digital switching center which automatically determines the routings needed for each communication and a radio link converter which makes it possible to establish 9 simultaneous communications with radio users.

The corps' CP make it possible to connect more than about 100 users of all kinds to the network. They have their own switching center and are connected by microwave links to two or three nodal points. Division CP authorize the connection of several dozen users of all types to the network. They can operate only if they are connected to a nodal point by microwave links.

Connection by radio integration (tactical CP, mobile units ...) permits a user who is isolated or moving through the corps area to have the same telephone and telegraph possibilities as the users of a stationary CP.

RITA is a fully digital grid network in which the installation needed for routing each communication is determined by the so-called "call distribution" technique. This enables it to remain operational despite significant damage. Each junction, whether part of the grid network or a connection, is automatically and electronically coded; each user is distinguished by a call number which he retains regardless of his geographic position in the corps area. RITA can be connected without difficulty or delay to a neighboring RITA system of the 1st Army or other corps, to civilian and military (PTT [postal, telephone and telegraph services] and RITTER [Ground Forces Infrastructure Communications Network]) infrastructure networks and to allied forces' networks. It will ultimately equip troops beginning in 1982. French ground forces will then be among the few armies in the world to have a fully digital automatic troop communications system capable of handling the expected intense traffic load in total security.

Infrastructure Communications: RITTER

The decision was made in 1969 to modernize and reorganize the infrastructure telecommunications network to provide ground forces with a reliable and versatile system independent of the PTT network.

The Ground Forces Infrastructure Communications Network (RITTER) is designed, organized and equipped to provide ground forces, inter-services structures and, if necessary, government agencies with routing within desirable time periods and under desirable security conditions and with information needed to exercise command, despite neutralization or destruction of the system.

The system has the following features: coverage of national territory and possible, rapid connection to troop networks (RITA); possible interconnection with air and naval networks; grid network offering redundance; arrangement of switching equipment.

From a central quadrangle with four primary transmission centers, the basic national network serves seven main centers corresponding to military regions and linked by tropospheric microwave links, BLI [independent sideband] radio links and radioteleprinter links.

Made available in 1977, the basic network required the creation or reorganization of 23 transmission centers, the installation of 80 radio terminals, 11 automatic telegraph relay centers (CARTEL) and 11 telephone switching centers to the network's nodal points. Its service possibilities are significant. In each nodal point, for example, the CARTEL electronically performs the following operations: verification of the correspondent's identity by means of his route number; emergency reading; search for a free outgoing route serving the recipient of the message; transmission of message; detection of procedural errors; temporary interruption of traffic in progress to allow passage of a flash message.

The system's security is assured by systematic duplication of equipment.

The basic network is undergoing expansion for integration of the infrastructure system serving French forces stationed in Germany, to extend the basic network's advantages to the CP of territorial military divisions and to large garrisons, and finally to offer more connection points to the infrastructure for forces which are in transit or engaged.

Altogether, RITTER will cover 200,000 kilometers of permanent circuits and will serve 620 telegraph and 70,000 telephone stations when completed in 1982.

11,915
CSO: 3100 END

END OF
FICHE
DATE FILMED

31 March 1981